UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 January 2009*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

DETAILED ACTION

This action is in response to applicant's response filed on 1/29/09. Claims 1-20

are now pending in the present application. **This action is made final**.

Drawings

1.   The drawings are objected to under 37 CFR 1.83(b) because they are

incomplete. 37 CFR 1.83(b) reads as follows:

> When the invention consists of an improvement on an old machine the drawing
> must when possible exhibit, in one or more views, the improved portion
> itself, disconnected from the old structure, and also in another view, so
> much only of the old structure as will suffice to show the connection of
> the invention therewith.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing

figure is to be canceled, the appropriate figure must be removed from the replacement

sheet, and where necessary, the remaining figures must be renumbered and

appropriate changes made to the brief description of the several views of the drawings

for consistency. Additional replacement sheets may be necessary to show the

renumbering of the remaining figures. Each drawing sheet submitted after the filing date

of an application must be labeled in the top margin as either "Replacement Sheet" or

"New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in

the next Office action. The objection to the drawings will not be held in abeyance.

The claims recited the limitation of "varying the index within the lookup table…. in

dependence upon the sampled amplified RF signal". However, since it is not clear how

indexes of a look up table would be varied, a **new drawing** showing both the lookup

table before and after varying of the index in the look up table is required for clarification

purpose, noting that the patentability of the claimed invention is apparently relied on the

above limitation according to the cited prior arts.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3.   Claims **1-20** are rejected under 35 U.S.C. 112, first paragraph, because the

specification, while being enabling for "updating a lookup table comprising indexes",

does not reasonably provide enablement for "varying the index within the lookup table".

The specification does not enable any person skilled in the art to which it pertains, or

with which it is most nearly connected, to make or use the invention commensurate in

scope with these claims.

The limitation of "varying the index within the lookup table …… in dependence

upon the sampled amplified RF signal" is not clearly explained by the specification (see

paragraphs [0021-0027]) that would enable any person skilled in the art to which it

pertains, or with which it is most nearly connected, to make or use the invention

commensurate in scope with these claims.

Here, although a look up table that is indexed with stored distortion data is well

known in the art, it is not clear how the varying index function would be performed.

Specifically in a conventional way, the look up table would store distortion data in

dependence upon the sampled amplified RF signal, where the look-up table would

normally be indexed according to the ascending order of the amplitude of the sampled

amplified RF signal. During the normal operation, the measured amplitude of the

sampled amplified RF signal would be referred to the look up table according to its

ordered amplitude index and the corresponding distortion data would be retrieved

accordingly to compensate for distortions. Therefore, the index is used to look up, not

for varying.

However, in order to speed up prosecution of the application, the limitation of

"varying the index within the lookup table…." would be interpreted as "update the look

up table" or "obtaining the index within the lookup table" or "obtaining the distortion

compensation data based on the index of the look up table" to correct predistortions of

the transmitted signal. In another word, for subject matter purpose, the feedback signal

(i.e, the sampled signal, either amplitude or phase or by comparison) are used to lookup

distortions data that are indexed in a look up table according to the sampled signal to

compensate for the distortions.

In addition, regardless of whether or not Applicant agrees with the above

interpretation, Applicant is hereby requested to explain and/or amend the specification

and/or claims to **clearly** describe the meanings of the limitation of "varying the index

within the lookup table.... ......in dependence upon the sampled amplified RF signal" in

the next communication because of the possible patentability of the limitation.

Claim Rejections - 35 USC 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or

described as set forth in section 102 of this title, if the differences between the subject

matter sought to be patented and the prior art are such that the subject matter as a

whole would have been obvious at the time the invention was made to a person having

ordinary skill in the art to which said subject matter pertains. Patentability shall not be

negatived by the manner in which the invention was made.

5.   Claims **1, 3-5, 7, 10, 19** are rejected under 35 U.S.C. 103(a) as being

unpatentable by **Tiittanen** (US **5,371,481**) in view of **Lee** (US 6,246,865).

        Regarding claims **1, Tiittanen** discloses a method of transmitting an amplified RF

signal comprising:

        providing a lookup table (LUT) for storing of predistortion data (see col. 2, line 52-

col. 3, line 10 and col. 5, lines 18-22), wherein one skilled in the art would recognize that

the data structure in EEPROM of **Tiittanen** would obviously comprise a table storing

distortion data with indexes based on the ouput power in the similar way as disclosed by

Lee (see col. 3, line 57 - col. 4, line 38);

providing a power amplifier circuit for receiving a first analog RF signal and for

providing the amplified RF signal therefrom (see Fig. 1, regarding power amplifier 50);

receiving a digital modulated signal (see Fig. 1 regarding I/Q coder 12, and col.

5, lines 15-38);

indexing the LUT to provide indexed predistortion data (see Fig. 1, col. 2, lines

52-61, col. 5, lines 15-38);

predistorting the digital modulated signal in dependence upon the indexed

predistortion data to form a predistorted digital modulated signal (see Fig. 1, col. 2, lines

52-61, col. 5, lines 15-38 and col. 6, lines 48-65);

converting the predistorted digital modulated signal into an analog modulated

signal (see Fig. 1 regarding ADC 18, 20);

amplifying the analog modulated signal using the power amplifier to form the

amplified RF signal (see Fig. 1, regarding amplifier 50);

sampling a portion of the amplified RF signal (see Fig. 1, regarding power meter

52); and,

varying the index (address) within the LUT for other than continuously changing

the predistortion data that is used for predistorting of the digital modulated signal in

dependence upon the sampled amplified RF signal (see col. 5, lines 35-66 and col. 2,

lines 52-61 regarding updating amplitude/phase distortions in the EEPROM), wherein

the output power meter 52 in **Tiittanen** would obviously be used as the **address** of the

EEPROM in the similar way as clearly disclosed by **Lee** (see col. 4, lines 1-38), in order

to obtain distortion values for amplitude/phase compensation.

Therefore, by simply modifying **Tiittanen** to provide a LUT as described by **Lee**

to the EEPROM in **Tiittanen**, the claimed limitations regarding "varying the index within

the LUT" are made obvious by **Tiittanen** and **Lee**.

Regarding claim **3, Tiittanen** would obviously teach the predistortion data is

varied in dependence upon at least one of a **temperature** of the power amplifier and

supply voltage and output load as claimed (see col. 3, lines 3-7 and col. 6, lines 3-15).

Regarding claim **4**, the claim is rejected for the same reason as set forth in claim

1 above. In addition, since the power meter in Tiittanen would have a limited dynamic

range, it would have been obvious to one skilled in the art at the time the invention was

made to modify Tiittanen to provide an amplitude detector with a predetermined

dynamic range corresponding to higher amplitudes of the amplified RF signal in order to

provide the sampled signal at higher carrier frequencies as suggested by Tiittanen (see

col. 5, lines 39-47).

Regarding claim **5**, the claim is rejected for the same reason as set forth in claim

4 above. In addition, **Tiittanen** as modified in view of **Lee** would obviously teach

detecting with the amplitude detector the magnitude of the amplified RF signal;

determining an index within the LUT corresponding to a predistortion data for

predistorting the digital modulated signal to correct the sampled amplified RF signal;

and feeding the determined index back to the LUT in order to effect the predistortion of

the digital modulated signal to correct the sampled amplified RF signal (see col. 5, lines 25-66).

Regarding claim **7**, the claim is rejected for the same reason as set forth in claim 4 above. In addition, **Tiittanen** as modified in view of **Lee** would obviously teach detecting with the amplitude detector the magnitude of the amplified RF signal; providing a predetermined relationship between a magnitude and phase response of the power amplifier circuit; determining a phase of the amplified RF signal in dependence upon the predetermined relationship; and, varying the index within the LUT in dependence upon the determined amplitude and phase of the amplified RF signal (see Tiittanen, col. 5, lines 25-66 and col. 6, lines 48-65, and Lee, col. 4, lines 1-63).

Regarding claim **10**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, **Tiittanen** as modified in view of **Lee** would obviously teach determining an index within the LUT corresponding to a predistortion data for predistoring the digital modulated signal to correct the amplitude and phase of the sampled amplified RF signal; varying the index within the LUT in dependence upon the determined amplitude and phase of the sampled amplified RF signal (see Tiittanen, col. 5, lines 25-66 and col. 6, lines 48-65 and Lee, col. 4, lines 1-63).

Regarding claim **19**, the claim is rejected for the same reason as set forth in claim 3 above. In addition, **Tiittanen** as modified in view of **Lee** would obviously teach determining an index within the LUT corresponding to a predistortion data for predistoring the digital modulated signal to correct the amplitude and phase of the sampled amplified RF signal; varying the index within the LUT in dependence upon the

determined amplitude and phase of the sampled amplified RF signal (see Tiittanen, col. 5, lines 25-66 and col. 6, lines 48-65 and Lee, col. 4, lines 1-63).

6.   Claims **1-3, 6, 11-12** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Kim** (US **2004/0017257**) in view of **Lee** (US **6,246,865**).

Regarding claim **1, Kim** discloses a method that compensates for pre-distortion of a power amplifier includes a digital pre-distorter controller which generates a power/phase compensation coefficient, a temperature compensation coefficient and a frequency compensation coefficient, a look-up table which stores the coefficients, a pre-distorter kernel which pre-compensates an input signal based on the temperature compensation coefficient from the look-up table, which would obviously include all the claimed limitations (see Fig. 6 and [0064-0079]).

However, Kim differs from the claimed limitation in that the index of the LUT in Kim is "indexed or "varied" in dependence upon the input signal (see [0070, 0075] noting for the "address") rather than on the sampled amplified RF signal. However, in an analogous art, **Lee** teaches a predistortion LUT wherein the index is "indexed" in dependence upon the sampled amplified RF signal (see col. 4, lines 1-38). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Kim** to index the LUT based on the sampled amplified RF signal, in place of the input signal, as suggested by **Lee**, as an alternative of obvious design choice. By doing so, Kim as modified in view of Lee would obviously teach all the claimed limitations of claim 1.

Regarding claim **2, Kim** as modified would further teach comparing the first

predetermined symbol patterns to the second predetermined symbol patterns to vary

the index of the LUT as claimed (see [0007, 0064, 0078]), noting that the baseband

digital input signal (Vref) would implicitly teach a first predetermined symbol patterns.

The digital feedback signal (Vfb) would implicitly teach a second predetermined symbol

patterns.

Regarding claim **3, Kim** as modified would further teach temperature

dependence for distortion compensation as claimed (see [0076]).

Regarding claim **6**, the claim is rejected for the same reason as set forth in claim

2 above. In addition, the comparison to two predetermined symbol patterns would

obviously comprise the step of minimizing differences between the first predetermined

symbol patterns to the second predetermined symbol patterns as claimed, for

minimizing distortion errors.

Regarding claim **11**, the claim is rejected for the same reason as set forth in

claim 2 above. In addition, **Kim** as modified would further teach temperature

dependence for distortion compensation as claimed (see [0076]).

Regarding claim **12**, the claim is rejected for the same reason as set forth in

claim 3 above. In addition, the comparison to two predetermined symbol patterns as

mentioned in claim 2 above would obviously comprise the step of minimizing differences

between the first predetermined symbol patterns to the second predetermined symbol

patterns as claimed, for minimizing distortion errors.

7.   Claims **1-8, 10-16, 18-20** are rejected under 35 U.S.C. 103(a) as being

unpatentable by **Chiesa et al** (US **5,524,296**) in view of **Lee** (US **6,246,865**).

Regarding claims **1, 8, Chiesa** discloses a method that compensates for pre-

distortion of a power amplifier which would obviously comprise all the claimed limitations

(see Figs. 1-2 and col. 2, line 28 – col. 5, line 27).

However, **Chiesa** differs from the claimed limitation in that the index of the LUT is

"indexed or "varied" in dependence upon the input signal (see Fig. 2 and col. 4, lines

28-38) rather than on the sampled amplified RF signal. However, in an analogous art,

Lee teaches a predistortion LUT wherein the index is "indexed" in dependence upon the

sampled amplified RF signal (see col. 4, lines 1-38). Therefore, it would have been

obvious to one skilled in the art at the time the invention was made to modify **Chiesa** to

index the LUT based on the sampled amplified RF signal, in place of the input signal, as

suggested by **Lee**, as an alternative of obvious design choice. By doing so, Chiesa in

view of Lee would obviously teach all the limitations of claims 1 and 8.

Regarding claims **2, 6, Chiesa** as modified would further teach comparing the

first predetermined symbol patterns to the second predetermined symbol patterns and

minimizing differences between the first predetermined symbol patterns to the second

predetermined symbol patterns to vary the index of the LUT as claimed (see col. 3, lines

33-42).

Regarding claim **3, Chiesa** as modified fails to teach a distortion compensation for temperature. However, it is noted that utilizing such distortion compensation for temperature variation is well known in the art. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Chiesa** to provide distortion data caused by temperature variation in a LUT as well, for further improving the performance of the transmitter.

Regarding claim **4**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, since one skilled in the art would recognize that ADCs (Fig. 1) in **Chiesa** would detect signal amplitude and would have a limited dynamic range, it would have been obvious to one skilled in the art at the time the invention was made to modify **Chiesa** to provide the ADCs with a predetermined dynamic range corresponding to higher amplitudes of the amplified RF signal as claimed, in order to provide the sampled signal at carrier frequencies that are causing distortions.

Regarding claim **5**, the claim is rejected for the same reason as set forth in claim 4 above. In addition, **Chiesa** as modified in view of **Lee** would obviously teach detecting with the amplitude detector the magnitude of the amplified RF signal; determining an index within the LUT corresponding to a predistortion data for predistorting the digital modulated signal to correct the sampled amplified RF signal; and feeding the determined index back to the LUT in order to effect the predistortion of the digital modulated signal to correct the sampled amplified RF signal (see Figs. 1-2 and col. 3, lines 52-67).

Regarding claim **7**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, **Chiesa** as modified would further teach determine relationship between amplitude and phase of the amplified signal as claimed (see Fig. 2 regarding CORDIC-2 and col. 3, lines 50-67).

Regarding claim **10**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, **Chiesa** as modified would obviously teach predistortion correction based on amplitude and phase of the amplified signal as claimed (see Fig. 2 and col. 3, lines 50-67 regarding error tables).

Regarding claim **11**, the claim is rejected for the same reason as set forth in claim 3 above.

Regarding claim **12,** the claim is rejected for the same reason as set forth in claim 3 above. In addition, **Chiesa** as modified would further teach comparing the first predetermined symbol patterns to the second predetermined symbol patterns and minimizing differences between the first predetermined symbol patterns to the second predetermined symbol patterns to vary the index of the LUT as claimed (see col. 3, lines 33-42).

Regarding claim **13,** the claim is rejected for the same reason as set forth in claim 4 above. In addition, **Chiesa** as modified would further teach comparing the first predetermined symbol patterns to the second predetermined symbol patterns and minimizing differences between the first predetermined symbol patterns to the second

predetermined symbol patterns to vary the index of the LUT as claimed (see col. 3, lines 33-42).

Regarding claim **14**, the claim is rejected for the same reason as set forth in claim 7 above.

Regarding claim **15**, the claim is rejected for the same reason as set forth in claim 14 above. In addition, **Chiesa** as modified would further teach determine relationship between amplitude and phase of the amplified signal as claimed (see Fig. 2 regarding CORDIC-2 and col. 3, lines 50-67).

Regarding claim **16**, the claim is rejected for the same reason as set forth in claim 3 above. In addition, **Chiesa** as modified would further teach providing a receiver circuit with a quadrature down-conversion mixer; quadrature sampling of the amplified RF signal with the receiver circuit; and detecting an amplitude and phase of the amplified RF signal (see Figs 1-2 and col. 3, lines 50-57).

Regarding claims **18-20**, the claims are rejected for the same reason as set forth in claim 10 above.

8.   Claims **9, 17** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Chiesa** in view of **Lee** and further in view of **Shi** (US **6,819,910**).

Regarding claim **9**, the claim is rejected for the same reason as set forth in claims 1, 8 above. However, **Chiesa** fails to teach the receiver circuit is a same receiver circuit used within a receiver path of a transceiver system. However, in an analogous

art, **Shi** teaches a calibration method for a transmitter wherein the receiver circuit is

reused in the feedback loop for calibration of the transmitter (see Fig. 11 and noting for

the "reuse" in the title). Therefore, it would have been obvious to one skilled in the art at

the time the invention was made to modify **Chiesa** to reuse the receiver circuit in the

feedback loop for predistortion compensation of the power amplifier as well, for cost

saving.

Regarding claim **17**, the claim is rejected for the same reason as set forth in

claim 9 above.

Response to Arguments

9.   Applicant's arguments filed 1/29/09 have been fully considered but they are not

persuasive.

In the Remark, Applicant contends that

The drawings are objected to [001] Figure 3 has been amended to insert the wording form the
specification at paragraph 21 wherein the index variation is described. The figure now recites "varying the
index within the LUT that is used for indexing of the predistortion data stored therein ..."
It is respectfully submitted that the drawings now meet the requirements of 37 C.F.R. 1.83(b).

In response, the examiner asserts that the drawing is required to show how the

"varying index" function would be performed, not what the index is. Specifically, the

drawing should show a look up table before varying the index and the look up table after

the index is varied.

Applicant further contends that

The claims are rejected under 35 U.S.C. 112, first paragraph as being insufficient to enable "varying the
index within the lookup table."
Claim 1 is amended to read "varying the index within the LUT that is used for indexing of the predistortion
data stored therein ..." thereby clarifying the wording thereof. The wording is taken from paragraph 21 of

the specification and, as such, adds no new matter.
Applicant respectfully submits that the amendment overcomes the objection under 35 U.S.C. 112.

In response, the examiner asserts that a look up table that is indexed with stored

distortion data is just a well known fact in the art. However, it is not clear how the

varying index function would be performed. Specifically, in a conventional way, the look

up table would store distortion data in dependence upon the sampled amplified RF

signal, where the look-up table would normally be indexed according to the ascending

order of the amplitude of the sampled amplified RF signal.

For examples, during the calibration process, the following data are calibrate and

recorded,

Amplitude = 3 distortion data Ioffset = 2 Qoffset = 4 ;

Amplitude = 5 distortion data Ioffset = 4 Qoffset = 3 ;

Amplitude = 4 distortion data Ioffset = 3 Qoffset = 4 ;

Amplitude = 9 distortion data Ioffset = 5 Qoffset = 2 ;

Then a look up table would be indexed according to the ascending order of

amplitude

Index = 1 Amplitude = 3 distortion data Ioffset = 2 Qoffset = 4 ;

Index = 2 Amplitude = 4 distortion data Ioffset = 3 Qoffset = 4 ;

Index = 3 Amplitude = 5 distortion data Ioffset = 4 Qoffset = 3 ;

Index = 4 Amplitude = 9 distortion data Ioffset = 5 Qoffset = 2 ;

During the normal operation, the measured amplitude of the sampled amplified

RF signal would then be referred to the look up table according to its ordered amplitude

index, and the corresponding distortion data would be retrieved accordingly to compensate for distortions.

For examples, during the normal operation, the amplitude of the RF amplified signal is measured as follow,

If Amplitude = 5, then the distortion data (Ioffset = 4   Qoffset = 3) at index =3 would be retrieved to compensate for distortion.

If Amplitude = 7, then the distortion data (Ioffset = 4   Qoffset = 3) at index =3 and the distortion data (Ioffset = 5   Qoffset = 2) at index =4 would be retrieved and then interpolated, as an example, to compensate for distortion. In this case, Ioffset = 4.5 Qoffset = 2.5.

Therefore, <u>the index is used to look up, not for varying</u>.

Therefore, the limitation of "varying the index within the lookup table …… in dependence upon the sampled amplified RF signal" is **not** clearly explained by the specification that would enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. The amendment of "the LUT that <u>is used for indexing of the predistortion data stored therein ..</u>" is just simply a well known fact.

Applicant further contends that

Claims 1, 3-5, 7, 10, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable by Tiittanen (US 5,371,481) in view of Lee (US 6,246,865).
It is alleged that Tiittanen teaches a LUT for signal compensation. There is no teaching in Tiittanen of varying an index to the LUT. Though, Tiittanen teaches varying contents of the LUT and using the LUT in some way but does not vary the index to the LUT for indexing of predistortion data stored therein. Therefore the claims are not obvious over Tiittanen and Lee.

Claims 1-3, 6, 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable by Kim (US 2004/0017257) in view of Lee (US 6,246,865).
Similarly, it is alleged that the combination of Kim and Lee teaches varying an index to the LUT but it is not clear form the references how the index is varied or that it is varied for indexing of predistortion data stored therein.
Therefore the claims are not obvious over Kim and Lee.
Claims 1-8, 10-16, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable by Chiesa et al (US 5,524,296) in view of Lee (US 6,246,865).
Similarly, it is alleged that the combination of Chiesa and Lee teaches varying an index to the LUT but it is not clear form the references how the index is varied or that it is varied for indexing of predistortion data stored therein.
Therefore the claims are not obvious over Chiesa and Lee.
Claims 9, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable by Chiesa in view of Lee and further in view of Shi (US 6,819,910).
Claims 9 and 17 cannot be obvious if they depend from allowable base claims.

In response, the examiner asserts that the 103 rejection is made just simply

based on the interpretation of "varying the index" as "looking up the index". If the

"varying the index" differs from "looking up the index" as alleged, a drawing and a

description of this "varying the index" function are required in order to overcome the

above 112 first paragraph rejection.

Conclusion

10.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

11.   **Any response to this final action should be mailed to:**

    Box A.F.

    Commissioner of Patents and Trademarks

    Washington, D.C. 20231

or faxed to:

    (571) 273-8300 (for **formal** communications intended for entry)

    (571)-273-7893 (for informal or **draft** communications).

Hand-delivered responses should be brought to Customer Service Window,

Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry concerning this communication or communications from the examiner

should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893,

Monday-Thursday (9:00 AM - 5:00 PM).

Or to Nay Maung (Supervisor) whose telephone number is (571) 272-7882.

/Duc M. Nguyen/

Primary Examiner, Art Unit 2618

Mar 25, 2009